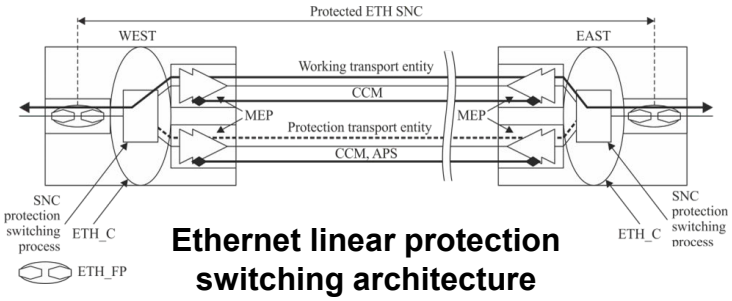
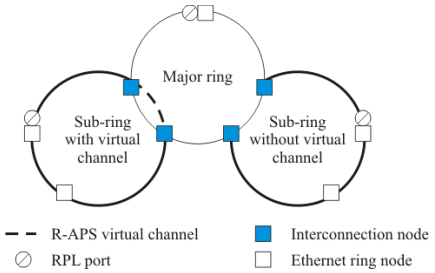
ITU-T Study Group 15

G.8031, G.8032, G Suppl. 52, 54, 60 Ethernet Linear and Ring Protection Switching

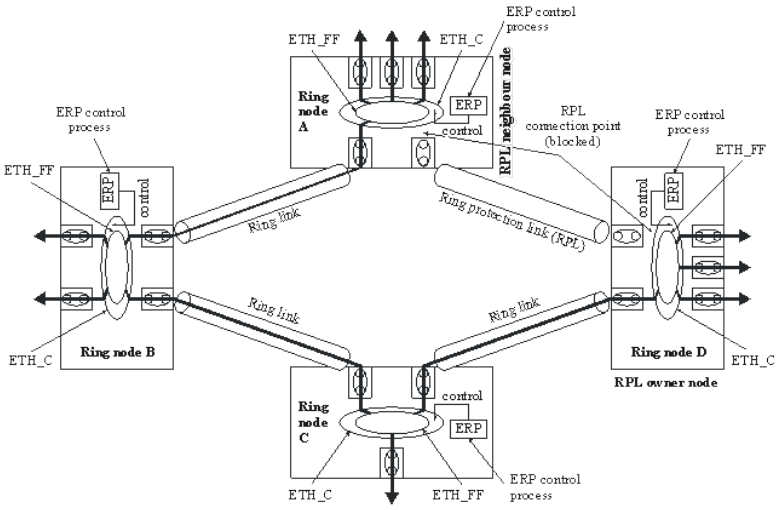
- ITU-T G.8031 specifies the linear automatic protection switching (APS) protocol and protection switching mechanisms for Ethernet layer network (ETH) linear topologies.
- ITU-T G.8032 specifies the ring APS protocol and protection switching mechanisms for ETH ring topologies.
- As carrier-grade protection switching mechanisms, ITU-T G.8031 and G.8032 support a large variety of applications, examples of which are informatively described in ITU-T G Suppl. 52, 54, 60.



Ethernet linear protection switching architecture



Ring interconnection options



Ethernet ring protection switching architecture

1. ITU-T G.8031 – Ethernet linear protection switching

Recommendation ITU-T G.8031 defines the APS protocol and linear protection switching mechanisms for point-to-point VLAN-based ETH subnetwork connection (SNC) in Ethernet transport networks. Linear 1+1 and 1:1 protection switching architectures with unidirectional and bidirectional switching are defined in this Recommendation.
This Recommendation relies on Continuity Check Messages (CCMs), Linear APS messages, and Maintenance Entity Group (MEG) End Points (MEPs) as described in Recommendation ITU-T G.8013/Y.1731 and as supported by Recommendation ITU-T G.8021 that also supports the attendant SNC protection process.

2. ITU-T G.8032 – Ethernet ring protection switching

Recommendation ITU-T G.8032 defines the ring automatic protection switching (RAPS) protocol and protection switching mechanisms for ETH ring topologies. The protection protocol defined in this Recommendation enables protected point-to-point, point-to-multipoint and multipoint-to-multipoint connectivity within a ring or interconnected rings, called "multi-ring/ladder network" topology.
The ETH ring maps to the physical layer ring structure.
This Recommendation relies on Ring APS messages, MEG Intermediate Points (MIPs) and MEPs as described in Recommendation ITU-T G.8013/Y.1731 and as supported by Recommendation ITU-T G.8021 that also supports the attendant ring protection control process.

3. ITU-T G Suppl. 52 – Ethernet ring protection switching

Supplement 52 to ITU-T G-series Recommendations provides supplemental information that informatively (rather than normatively) describes how ITU-T G.8032 can support various Ethernet services (E-Line, E-LAN, E-Tree) and how it can be used in various network applications. Additionally, examples of Ethernet ring interconnection, guidelines for configuration and management procedures, protection switching for multiple Ethernet ring protection (ERP) instances and end-to-end network/service resiliency involving ITU-T G.8032, are described.
This supplement is intended to consolidate and expand upon related material in Recommendation ITU-T G.8032.

4. ITU-T G Suppl. 54 – Ethernet linear protection switching

Supplement 54 to ITU-T G-series Recommendations provides supplemental information that informatively (rather than normatively) provides examples of network application scenarios involving Recommendation ITU-T G.8031.

5. ITU-T G Suppl. 60 – Ethernet linear protection switching with dual node interconnection

Supplement 60 to ITU-T G-series Recommendations provides supplemental information that informatively (rather than normatively) describes potential solutions to support dual node interconnection based on the ITU-T G.8031 Ethernet linear protection switching to support resilient interconnection with an adjacent recovery domain. Other viable means of supporting dual node interconnection for Ethernet are known to exist. This Supplement is intended to give examples based on Recommendation ITU-T G.8031 only.